

WHAT IS CLAIMED IS:

1.           A ceramic tube comprising:  
              a ceramic containing at least one element  
              selected from the group consisting of C, Ti, Zn, Sn, Al  
              and a rare-earth element;  
              a Cu compound; and  
              a catalyst composed of at least one element  
              selected from the group consisting of Fe, Co, Pt, Ru,  
              Pd and La.
2.           The ceramic tube according to Claim 1,  
              wherein elementary ratio of said Cu compound to said  
              catalyst is 1 to 0.5 in terms of Cu/catalyst.
3.           The ceramic tube according to Claim 1, which  
              contains one of Cl and Br.
4.           A ceramic tube laminate having a structure in  
              which a ceramic tube is laminated onto at least one  
              side of a substrate and the ceramic tube grows two- or  
              three-dimensionally from a core containing a metal or  
              metal oxide and is connected to an adjacent core.
5.           A ceramic tube laminate having a structure in  
              which the ceramic tube grows onto at least one side of  
              a substrate in the direction almost perpendicular to  
              the substrate.
6.           A ceramic tube laminate having a structure in  
              which the ceramic tube of claim 1 is placed between at  
              least two substrates.
7.           The ceramic tube laminate according to Claim  
              4 which comprises a ceramic tube comprising:

a ceramic containing at least one element selected from the group consisting of C, Ti, Zn, Sn, Al and a rare-earth element;

a Cu compound; and

a catalyst composed of at least one element selected from the group consisting of Fe, Co, Pt, Ru, Pd and La.

8. A coating solution for producing ceramic tubes, which contains:

at least one element selected from the group consisting of C, Ti, Zn, Sn, Al and a rare-earth element;

Cu compound; and

at least one element selected from the group consisting of Fe, Co, Pt, Ru, Pd and La;

wherein an organic material containing C, N and O is bound to the metallic element.

9. The coating solution according to Claim 8, wherein said organic material is of at least one type selected from the group consisting of phenolic resin, acrylic resin, epoxy resin, melamine resin and tetracarboxylic acid dianhydride.

10. The coating solution according to Claim 8, which contains one of Cl and Br.

11. A method for producing ceramic tubes comprising:

a coating step for coating a substrate with a hybrid coating solution comprising an organic material

and metallic element;

drying step for drying the coated solution to form a film;

pyrolysis step for pyrolyzing by heat treatment the dried film in an atmosphere containing oxygen at a low content; and

oxidation treatment step for decomposing by oxidation the film to produce hollow shapes in an atmosphere containing oxygen at a high content.